

A Simulation Platform for Multi Detector Chemical, Biological, Radiological, Nuclear (CBRN) and Toxic Industrial Chemicals (TICs) and Substances Training

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Changes in Users of Detection Equipment



- **Military**
- **Paramedics**
- **Fire / Police**
- **Coast Guard**
- **Customs /
DHS**



Changes in Chemical Threats and Targets



- Toxic Industrial Substances
- “Home Made” CW agents

There was a Need to Develop Comprehensive Training Solutions



Multi Agency - Multi Detector Training Scenarios

Agencies now use multiple detectors:

- **CWA/TICs Detectors : CAM / ICAM, LCD, ACADA, S-CAD, Hapsite, Chempro 100**

Different Agencies also coordinate their training:

- **Military, Law Enforcement, CSTs, DHS,**
- **Multi- National Training Exercises**

Environmentally Friendly Simulation Sources Are Available

Innovative types of technology can be used:

- **Electromagnetics - for personal contamination and simulated confidence testing**
- **Ultrasonics - for vapor release**
- **Powders/Liquids - for de-mil, contamination**
- **Simulation of CW/BW agents, Radiation and Nuclear contamination, TICs and false positives - IN THE SAME SCENARIO!**

Electromagnetic Sources



**Range 1 to 2 inches for 1 Bar on
CAMSIM**

Ultrasound Source

- 1 - ON/OFF**
- 2 - INCREASE POWER**
- 3 - DECREASE POWER**
- 4 - POWER INDICATOR**
- 5 - TRANSDUCER**
- 6 - BATTERY COVER**



Can be detected at 32 yards distance

CAMSIM TRAINING KIT

Electronic simulation of CW agents / TICs, decontamination and persistency.

Reports trainee errors

Safe and easy to use



Simulation Confidence Tester



Typical CWA Instruments for Use in a Training Exercise



Camsim



Hapsim-P



**S-CAD-
SIM**



ACADA SIM



**LCD-3
SIM**



**M Rae PID
SIM**

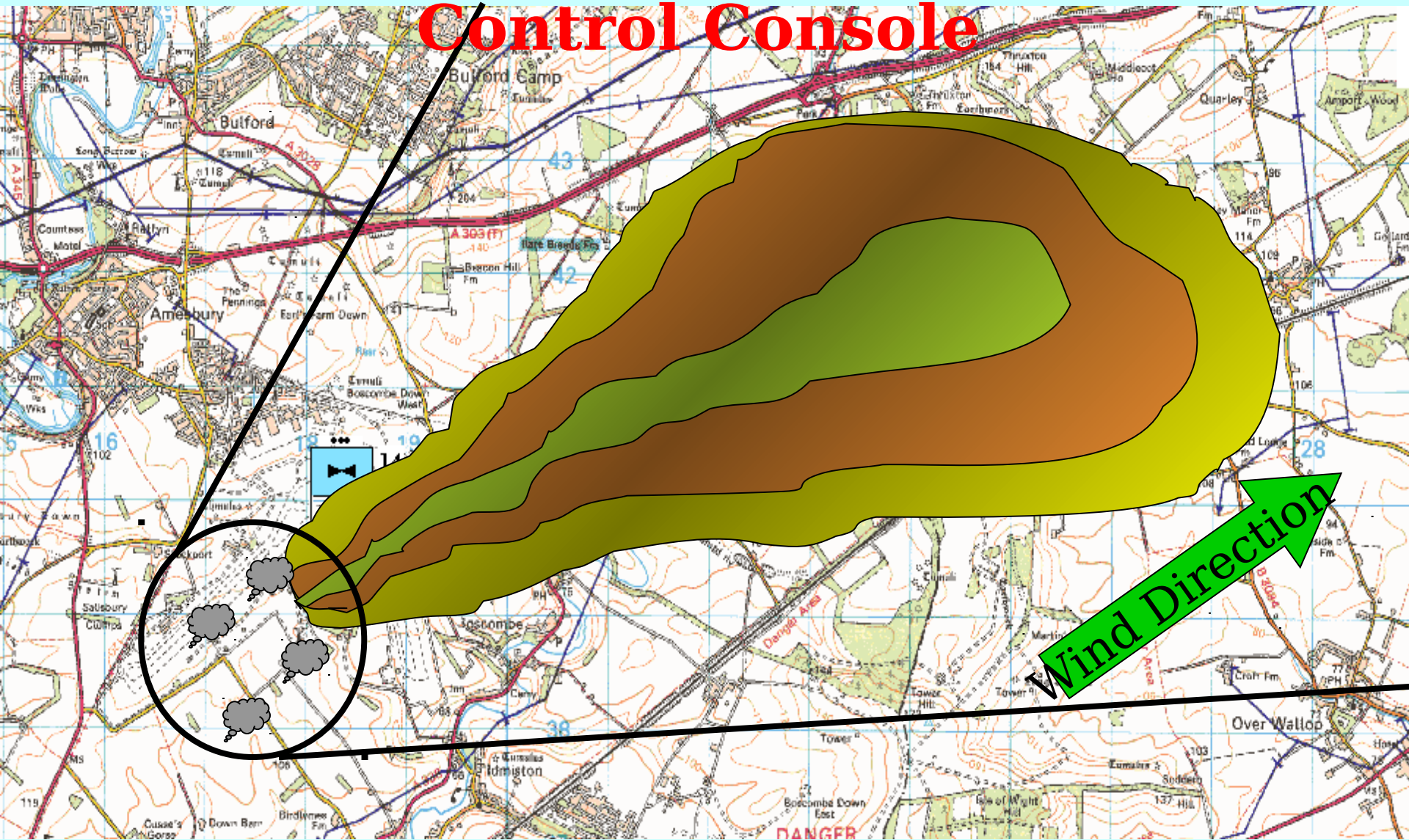
Simulation Detector Responses

SUBSTANCE	IMS	PID	S-CAD	HAPS
Disinfectants		H	N	N
Y				
Cleaning Fluid		G	N	N
Y				
Diesel Fuel	G	N		N
Y				
Cyanide	N	Y	N	Y
Chlorine	N	Y	N	Y

Ability for Timely Trainee Error Reporting is Critical

- **Real Time and After Action
Review Based Error Reporting**
- **Results Can be used to
Certify Trainees as competent
to use equipment**

FUTURE: Addition of Plume Modeling via a Mobile Instructor Control Console



Future Battlefield Training to Include Vehicle / Equipment Harnesses

- **Simulate localized and gross contamination**
- **Permit simulation of full and partial decontamination**
- **Based upon existing Radsim / Camsim technology**



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Conclusion

TODAY: A common simulation platform permits multi substance, multi detector, multi agency training to take place in an easy, safe and environmentally friendly manner while providing a consistent means of evaluating operator performance and reducing user asset cost of ownership.

TOMORROW: The future advances in battlefield CBRN training that are possible will greatly improve the CBRN readiness of defense and civilian forces.



Any Questions?

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